



Udel® Polysulfone Specifications

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GENERAL PROPERTIES

Udel® Polysulfone is an amorphous high performance thermoplastic offering excellent mechanical, electrical, and improved chemical resistance relative to polycarbonate.

Polysulfone's properties remain relatively consistent over a broad temperature range of -150°F (-100°C) to +300°F (+149°C).

Udel® offers hydrolysis resistance for continuous use in hot water and steam at temperatures up to 300°F (149°C). It offers high chemical resistance to acidic and salt solutions, and good resistance to detergents, hot water, and steam. In addition, polysulfone has excellent radiation stability and offers low ionic impurity levels.

Udel® is commonly used for analytical instrumentation, surgical and medical devices, and semiconductor process equipment components.

Food-grade Udel® polysulfone is FDA, NSF, 3A-Dairy and USP Class VI compliant. It may also be ordered in custom colors.

TYPICAL PROPERTIES of UDEL® PAES		
ASTM or UL test	Property	Udel®
<i>PHYSICAL</i>		
D792	Density (lb/in ³) (g/cm ³)	0.045 1.24
D570	Water Absorption, 24 hrs (%)	0.3
<i>MECHANICAL</i>		
D638	Tensile Strength (psi)	10,200
D638	Tensile Modulus (psi)	360,000
D638	Tensile Elongation at Yield (%)	30
D790	Flexural Strength (psi)	15,000

D790	Flexural Modulus (psi)	400,000
D695	Compressive Strength (psi)	13,000
D695	Compressive Modulus (psi)	375,000
D785	Hardness, Rockwell	M82 / R128
D256	IZOD Notched Impact (ft-lb/in)	1.3
THERMAL		
D696	Coefficient of Linear Thermal Expansion ($\times 10^{-5}$ in./in./°F)	3.10
D648	Heat Deflection Temp (°F / °C) at 264 psi	340 / 171
D3418	Glass Transition Temp (°F / °C)	374 / 190
-	Max Operating Temp (°F / °C)	300 / 149
C177	Thermal Conductivity (BTU-in/ft ² -hr-°F) ($\times 10^{-4}$ cal/cm-sec-°C)	- -
UL94	Flammability Rating	HB
ELECTRICAL		
D149	Dielectric Strength (V/mil) short time, 1/8" thick	425
D150	Dielectric Constant at 1 MHz	3.14
D150	Dissipation Factor at 1 MHz	0.0008
D257	Volume Resistivity (ohm-cm) at 50% RH	5×10^{16}

NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets.
All values at 73°F (23°C) unless otherwise noted.

UDEL is a registered trademark of BP Amoco Polymers.

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